

large, extending beyond the posterior border of the rostral, its posterior border very slightly notched in the middle. Scales hexagonal, much broader than long, subequal, 16 round the middle of the body. Tail very short, rounded at the end. Whitish, above with black longitudinal lines corresponding to the series of scales, beneath with longitudinal series of blackish dots.

Total length 150 millim. ; tail 25.

A single specimen from Zoutpansberg, Transvaal, presented by Mr. J. P. Cregoe.

This species is most nearly related to *T. aurantiacus*, Peters, which differs principally in the absence of a frontoparietal distinct from the interparietal, in the shorter symphyseal, in the broader dorsal scales, and in the number of scales round the body.

XLII.—*Descriptions of new Freshwater Fishes from Southern Cameroon.* By G. A. BOULENGER, F.R.S.

In the first part of the 'Proceedings of the Zoological Society' for 1903 (p. 21) I gave an account of a collection of fishes made by Mr. G. L. Bates in Southern Cameroon, several of the species mentioned being described as new. Many more fishes have since been received from this most energetic and successful collector, and have been acquired by the Trustees of the British Museum. Among them are representatives of further new species, of which I here offer short descriptions. These fishes are either from the Kribi River, some 15 miles from the sea, or from the Ja River (Dscha on German maps), a tributary of the Sanga River, which flows into the Congo; this Ja River is about 250 miles (by the path) from the sea-coast.

Alestes Batesii.

Depth of body $3\frac{3}{4}$ to 4 times in total length, length of head 4 to $4\frac{1}{2}$ times. Head longer than deep, $1\frac{2}{3}$ to twice as long as broad; snout rounded, as long as or longer than diameter of eye, which is 3 to 4 times in length of head; adipose eyelid indistinct; interorbital width about half length of head; maxillary not extending to below anterior border of eye; 16 teeth ($\frac{8}{3}$ or $\frac{2}{6}$) in the upper jaw, 8 in the outer row of the lower jaw; length of lower border of second suborbital

equalling or exceeding diameter of eye. Gill-rakers rather long, 16 to 18 on lower part of anterior arch. Dorsal II 7, behind the vertical of the base of the ventrals, originating much nearer root of caudal than end of snout, longest ray $\frac{2}{3}$ to $\frac{4}{5}$ length of head. Adipose fin small, at least twice as far from the rayed dorsal as from the root of caudal. Anal III 12-13. Pectoral shorter than head, not reaching ventral; latter not reaching vent. Caudal forked. Caudal peduncle $1\frac{1}{3}$ to $1\frac{1}{2}$ as long as deep. Scales 28-29 $\frac{4\frac{1}{2}}{3\frac{1}{2}}$, 2 between lateral line and ventral. Olive-brown above and on the sides, whitish beneath; a large round black spot on the caudal peduncle, at the base of the caudal fin; fins greyish, or blackish at the end.

Total length 245 millim.

Three specimens from the Kribi River.

This new *Alestes*, which I have great pleasure in naming after its discoverer, is closely allied to *A. macrolepidotus*, C. & V., and *A. grandisquamis*, Blgr., differing from both in the greater number of scales in the lateral line.

Petersius major.

Depth of body $2\frac{1}{3}$ times in total length, length of head 4 times. Head as long as deep, twice as long as broad, with concave upper profile; snout shorter than diameter of eye, which is $2\frac{2}{3}$ to $2\frac{3}{4}$ times in length of head; lower jaw projecting beyond upper; maxillary extending to below anterior border of eye; outer præmaxillary teeth 4, alternating with the 8 teeth of the inner row; lower border of second suborbital as long as eye. Gill-rakers short, about 10 on lower part of anterior arch. Dorsal II 8, originating above root of ventrals and at equal distance from nostrils and from root of caudal, longest ray longer than head. Adipose fin large, its depth $\frac{1}{2}$ to $\frac{3}{5}$ length of head. Anal III 18, anterior rays forming a rounded lobe. Pectoral a little shorter than head, not reaching ventral; latter not reaching vent. Caudal forked. Caudal peduncle a little longer than deep. Scales 24 $\frac{4\frac{1}{2}}{3\frac{1}{2}}$, 2 between lateral line and ventral; lateral line not extending beyond the eleventh to thirteenth scale. Silvery, yellowish on the back, a black spot above the shoulder and a black streak on each side of the tail, continued on the median rays of the caudal; iris red; dorsal fin greyish, with a band of orange-red; rays of ventral fin black at the tip.

Total length 82 millim.

Two specimens from the Ja River.

This species is most nearly related to *P. caudalis*, Blgr.,

from the Congo, which is easily distinguished by its more numerous scales ($29-30 \frac{5\frac{1}{2}}{3\frac{1}{2}}$) and anal rays (19 or 20 branched), the position of the dorsal fin entirely behind the ventrals, and the smaller size.

Nannocharax intermedius.

Body strongly compressed, its depth 5 to $5\frac{1}{2}$ times in total length. Head deeper than broad, more than twice as long as broad, $4\frac{1}{3}$ to $4\frac{1}{2}$ times in total length; snout pointed, a little shorter than the eye, the diameter of which is 3 times in length of head and equals or slightly exceeds interorbital width; mouth small, inferior, with 8 teeth in each jaw; sub-orbitals and opercle very feebly striated. Dorsal II 11, originating above base of ventrals, its first ray at equal distance from the end of the snout and the adipose fin; longest ray equals length of head. Anal III 7-8. Pectoral sharply pointed, as long as head or slightly shorter, reaching a little beyond origin of ventrals; latter reaching vent. Caudal forked, with sharply pointed lobes. Caudal peduncle twice as long as deep. Scales $47-50 \frac{5\frac{1}{2}-6}{6\frac{1}{2}-7\frac{1}{2}}$, 5 between the lateral line and the root of the ventral. Yellowish, with 11 to 13 brown cross-bars, which are darker on the sides; a dark blotch at the base of the caudal fin, which is traversed by a greyish bar; dorsal fin with small dark spots forming transverse series.

Total length 63 millim.

Four specimens from the Kribi River.

This species is intermediate between *N. niloticus*, Joannis, and *N. fasciatus*, Gthr.

Barbus jœ.

Depth of body equal to length of head, $3\frac{1}{4}$ to $3\frac{1}{2}$ times in total length. Snout rounded, shorter than the eye, the diameter of which is barely 3 times in length of head; mouth small, nearly terminal, with feebly developed lips; no barbels. Dorsal III 7; last simple ray not ossified, a little shorter than head; the border of the fin not emarginate, its origin nearer end of snout than root of caudal. Anal III 5. Pectoral shorter than head, not reaching ventral; latter a little behind vertical of origin of dorsal. Caudal forked. Caudal peduncle nearly twice as long as deep. Scales $23 \frac{2\frac{1}{2}}{2\frac{3}{4}}$, 2 between lateral line and ventral, 8 round caudal peduncle. Yellowish, the scales edged with dark brown; a large round black spot on each side behind the gill-cleft,

another at the root of the caudal, and five or six dark vertical bars between them ; a small blackish spot at the origin of the dorsal fin.

Total length 28 millim.

Three specimens from the Ja River.

Owing to the absence of barbels, this species needs comparison with one African species only, *B. Brazzæ*, Pellegrin, from the Congo, which has 8 branched rays in the dorsal fin and 28 scales in the lateral line.

Clarias pachynema.

Depth of body $6\frac{1}{2}$ to 7 times in total length, length of head $4\frac{2}{3}$ to 5 times. Head $1\frac{2}{3}$ to $1\frac{1}{2}$ as long as broad, smooth ; occipital process acutely pointed ; frontal fontanelle sole-shaped, about twice as long as broad ; occipital fontanelle smaller, in advance of occipital process ; eye very small, its diameter 3 to 4 times in length of snout, 6 times in inter-orbital width, which equals about $\frac{2}{5}$ length of head and exceeds width of mouth ; band of præmaxillary teeth $2\frac{1}{2}$ to 3 times as long as broad ; vomerine teeth conical, forming a short curved band, which in the middle is as broad as the præmaxillary band ; barbels thick and papillose at the base ; nasal barbel $\frac{3}{4}$ to $\frac{4}{5}$ length of head, maxillary $1\frac{1}{3}$ to $1\frac{1}{2}$, outer mandibular $1\frac{1}{4}$ to $1\frac{1}{3}$, inner mandibular $\frac{3}{4}$ to $\frac{4}{5}$. Gill-rakers few, about 15 on first arch. Clavicles concealed under the skin. Dorsal 92-95, its distance from the occipital process $\frac{2}{3}$ to $\frac{1}{2}$ length of head. Anal 78-80. Dorsal and anal extending to the very root of the caudal. Pectoral $\frac{1}{2}$ length of head, the spine feebly serrated on both sides and $\frac{2}{3}$ to $\frac{3}{4}$ the length of the fin. Ventrals about $1\frac{2}{3}$ as far from the base of the caudal as from the end of the snout. Caudal $\frac{1}{2}$ length of head. Dark olive-brown above, yellowish beneath ; no light edge to the fins.

Total length 175 to 255 millim.

Three specimens from the Ja River.

Compared with *C. laviceps*, Gill (Paris Museum specimen from the Gold Coast, described by Sauvage in 1882), *C. pachynema* differs in the longer barbels, the narrower mouth, the shorter space between the occiput and the dorsal fin, and the shorter body. *C. Salæ*, Hubrecht, which I formerly regarded as identical with *C. laviceps*, has a longer head, finely granulate above, a larger eye, the occipital process rounded or very obtusely pointed, and distinctly striated clavicles. These three species are very closely allied.

Allabenchelys brevior.

Depth of body 8 to $8\frac{1}{2}$ times in total length, length of head $5\frac{1}{4}$ to $5\frac{1}{2}$ times. Head about $1\frac{1}{4}$ as long as broad, smooth above, the bony casque, in the middle, nearly half the width of the head; supraoccipital process acutely pointed; a moderately large sole-shaped frontal fontanelle; occipital fontanelle a little smaller, partly on the occipital process; eye small, its diameter twice and a half in length of snout, 5 times in interorbital width; band of præmaxillary teeth 4 times as long as broad; vomerine teeth conical, in a crescentic band, which in the middle is as broad as the præmaxillary band. Nasal barbel about $\frac{3}{5}$ the length of the head, maxillary $\frac{3}{4}$ to $\frac{5}{6}$, outer mandibular $\frac{2}{3}$, inner mandibular $\frac{1}{2}$. Gill-rakers moderately long, 12 on anterior arch. Clavicles hidden under the skin. Dorsal fin with 65 or 66 rays, anal with 60 to 62, both narrowly separated from the caudal; the distance between the origin of the dorsal and the occipital process $\frac{3}{4}$ the length of the head. Pectoral half the length of the head; spine feebly serrated on both sides, $\frac{2}{3}$ the length of the fin. Ventrals small, twice as distant from the root of the caudal as from the isthmus. Caudal nearly half the length of the head. Olive-brown above, yellowish beneath.

Total length 150 millim.

Two specimens from the Ja River.

The shorter caudal region and the correspondingly shorter dorsal fin are the principal characters by which this species can be distinguished from *A. longicauda*, Blgr., also discovered by Mr. Bates in the Ja River.

Phractura longicauda.

Depth of body 14 times in total length, length of head $6\frac{1}{2}$ times. Head $1\frac{1}{3}$ as long as broad, the slightly rugose skull covered with very thin skin; snout half length of head, pointed, projecting a little beyond the mouth; space between the two nostrils at nearly equal distance from the end of the snout and from the eye; eye supero-lateral, its diameter 6 times in length of head, once and a half in interocular width; barbels papillose, maxillary and outer mandibular subequal, $\frac{1}{3}$ length of head, inner mandibular $\frac{1}{4}$; occipital process acuminate, about twice as long as broad, widely separated from the small interneural shield. Dorsal I 6, first ray longest, spinulose, as long as head; second dorsal very small, originating above last rays of anal. Anal II 6. Pectoral slightly longer than head, not reaching root of ventral. Caudal peduncle depressed, very slender, $\frac{2}{5}$ total length. 25 dorsal

and 19 ventral shields, of which 11 are on the caudal peduncle, the last 4 united round the latter. Brownish above, speckled with dark brown, white beneath; fins spotted with blackish.

Total length 77 millim.

A single specimen from the Kribi River.

The discovery of this species, which differs from its congeners in the longer caudal peduncle, raises the number of species of the genus *Phractura* to five. I may here note that *P. lindica*, Blgr., recently described from the Upper Congo, has been found by Mr. Bates in the Kribi and Ja Rivers, and that *Doumea typica*, Sauv., has also been rediscovered in the Kribi River.

Haplochilus cameronensis.

Depth of body $4\frac{1}{2}$ to $5\frac{1}{2}$ times in total length, length of head 4 times. Snout a little shorter than the eye, the diameter of which is $3\frac{1}{4}$ to $3\frac{1}{2}$ times in length of head; lower jaw projecting a little beyond upper; interorbital width about $\frac{1}{2}$ length of head. Dorsal 11 or 12, originating above middle of anal and nearer root of caudal than head; posterior rays produced in the male and a little shorter than head; first ray corresponding to eighteenth or nineteenth scale of lateral line. Anal 14 or 15, posterior rays produced as in the dorsal. Pectoral about $\frac{2}{3}$ length of head. Caudal rounded-acuminate, middle rays as long as head in the female, longer in the male. Caudal peduncle nearly twice as long as deep. Scales 30-33 in a longitudinal series, 10 or 11 in a transverse series. Yellowish or olive, with magenta-red spots, which are more profusely distributed in the male than in the female and may form longitudinal bands; fins dark, more or less spotted with magenta-red in the male.

Total length 55 millim.

Several specimens from the Kribi River and one from the Ja River.

Specimens from the Kribi River had previously been referred by me to *H. elegans*, Blgr., and have appeared under that erroneous name in the list published in the 'Proceedings of the Zoological Society.'

Fundulus Loennbergii.

Depth of body $4\frac{1}{2}$ times in total length, length of head $3\frac{2}{3}$ to 4 times. Snout as long as the eye, the diameter of which is $3\frac{1}{2}$ times in length of head; lower jaw projecting a little beyond upper; interorbital width about $\frac{1}{2}$ length of head. Dorsal and anal exactly opposed to each other, the former

with 11 or 12, the latter with 12 or 13 rays; dorsal originating a little nearer head than root of caudal, its first ray corresponding to the tenth scale of the lateral line; some of the posterior dorsal rays produced into long filaments. Pectoral about $\frac{2}{3}$ length of head. Caudal acuminate, median rays produced into filaments. Caudal peduncle nearly twice as long as deep. 27 scales in a longitudinal series, 10 in a transverse series. Yellowish olive, most of the scales with a crimson spot or vertical bar; head with crimson wavy lines; fins dark, all except the pectorals with small crimson spots.

Total length 50 millim.

Two specimens from the Kribi River.

This species is named in honour of Dr. E. Lönnberg, of Upsala, the author of several contributions to the fish-fauna of Cameroon.

Pelmatochromis longirostris.

Teeth in 3 series in each jaw, outer largest. Depth of body equal to length of head, 3 times in total length. Snout narrow, obtusely pointed, with slightly convex upper profile, more than one third length of head; diameter of eye $3\frac{1}{4}$ to 4 times in length of head and equal to or a little greater than interorbital width; maxillary not reaching to below anterior border of eye; 2 or 3 series of scales on the cheek; large scales on the opercle. Gill-rakers short, tubercular, notched, 9 or 10 on lower part of anterior arch. Dorsal XIV-XVI 8-9; spines increasing in length to the last, which measures $\frac{2}{5}$ to $\frac{1}{2}$ the length of the head; middle soft rays produced, a little shorter than the head. Pectoral $\frac{2}{3}$ to $\frac{3}{4}$ length of head. Ventral produced into a filament, reaching origin of anal or beyond. Anal III 6-7, third spine nearly as long as last dorsal. Caudal rounded-subacuminate. Caudal peduncle as long as deep. Scales smooth, with fine concentric striation, 28-30 $\frac{2-2\frac{1}{2}}{8-9}$; lat. l. $\frac{16-21}{8-10}$. Yellowish or pale brown, the scales edged with darker, or with rather ill-defined dark longitudinal streaks; a more or less distinct dark horizontal streak behind the eye; vertical fins with dark spots forming more or less regular bars; these numerous and usually very regular on the caudal fin; outer rays of ventrals white.

Total length 115 millim.

Seven specimens from the Kribi River.

Most nearly related to *P. Batesii*, Blgr., which has a shorter and broader snout, 4 series of scales on the cheek, a deeper body, more dorsal (10-11) and anal (8) soft rays, and a different coloration.